

CLAIMS

What is claimed is:

1. A micro-stamping method for photoelectric process, comprising:
 - providing a stamp having a raised pattern, an inkpad containing an ink and a substrate;
 - performing an ink adherence process by said inkpad to ink said raised pattern on said stamp;
 - performing a positioning process to move said inked stamp to a specific place precisely relative to the predetermined region of said substrate;
 - performing a pattern transferring process by said inked stamp to ink said predetermined region of said substrate, so as to transfer said raised pattern on the surface of said substrate; and
 - performing a fixation process to solidify said ink on said surface of said substrate, so as to form a substrate with a solidified ink.
2. The method according to claim 1, wherein said stamp is a plate stamp.
3. The method according to claim 2, wherein said plate stamp further comprises a plurality of spacers, and said plurality of spacers and said raised pattern are located at the same surface of said plate stamp, and furthermore said plurality of spacers are with a first height, while said raised pattern are with a second height.

4. The method according to claim 3, wherein said first height is larger than said second height.

5. The method according to claim 3, wherein said plurality of spacers are height-adjustable.

6. The method according to claim 3, wherein said substrate further comprises a plurality of dents for contacting said plurality of spacers.

7. The method according to claim 3, wherein said plate stamp further comprises a flexible material so that said plate stamp can deform to operate inking process with the support of said spacers.

8. The method according to claim 1, wherein said stamp is a roller stamp.

9. The method according to claim 8, wherein said inkpad is an automatic ink dropping apparatus, and said automatic ink dropping apparatus comprises:

an ink tank; and

an ink dropper, wherein said ink dropper is below said ink tank, so said ink is transported from said ink tank by said ink dropper.

10. The method according to claim 8, wherein said inkpad is an automatic ink feeder, and said automatic ink feeder comprises:

an ink tank; and

a foam roller, wherein said foam roller is rotated and partially contacted with said ink, so as to uniformly spread said ink on the surface of said foam roller by capillarity.

11. The method according to claim 1, wherein said ink is one element of the group consisting of red ink, green ink and blue ink.

12. The method according to claim 1, wherein said stamp is connected with an arm which moves freely above said inkpad and said substrate so that said stamp can contact said inkpad and substrate in turn.

13. The method according to claim 1, wherein said inkpad and substrate are connected to each other by a connect device which is further connected to an arm moving freely so that said inkpad and substrate can contact said stamp in turn.

14. A micro-stamping method for photoelectric process, comprising: to move the inked first stamp 100 to a specific place precisely relative to the first predetermined region of the substrate 104

inking uniformly said raised pattern on said inkpad;

moving said inked inkpad to a specific place precisely relative to the predetermined region of said stamp;

inking predetermined region of said stamp by said inkpad and transfer said raised pattern on the surface of said stamp;

moving said inked stamp to the predetermined region of said substrate;

inking said predetermined region of said substrate by said stamp, so as to transfer said raised pattern on the surface of said substrate; and

performing a fixation process to solidify said ink on said surface of said substrate, so as to form a substrate with a solidified ink.

15. The method according to claim 14, wherein said stamp is a plate stamp.

16. The method according to claim 15, wherein said plate stamp further comprises a plurality of spacers with a first height, and said plurality of spacers are located on a specific surface of said stamp, wherein said specific surface is inked.

17. The method according to claim 16, wherein said inepad is with a second height, and said first height is larger than said second height.

18. The method according to claim 16, wherein said plurality of spacers are height-adjustable.

19. The method according to claim 16, wherein said substrate further comprises a plurality of dents for contacting said plurality of spacers.

20. The method according to claim 16, wherein said plate stamp further comprises a flexible material so that said plate stamp

can deform to operate the inking process with the support of said spacers.

21. The method according to claim 14, wherein said stamp is a roller stamp.

22. The method according to claim 14, wherein said ink is one element of the group consisting of red ink, green ink and blue ink.

23. The method according to claim 14, wherein said stamp is connected with an arm which moves freely above said inkpad and said substrate so that said stamp can contact said inkpad and substrate in turn.

24. The method according to claim 14, wherein said inkpad and substrate are connected to each other by a connect device which is further connected to an arm moving freely so that said inkpad and substrate can contact said stamp in turn.

25. A micro-stamping method for photoelectric process, comprising:

providing a roller stamp having a raised pattern, an inkpad containing an ink and a substrate, wherein said inkpad is moved along a first tangent line of said roller stamp and contacted with said roller stamp at a first point of tangency, while said substrate is moved along a second tangent line of said roller stamp and contacted with said roller stamp at a second point of tangency, and said first tangent line is parallel and in opposite direction with said second tangent line;

moving said inkpad and said substrate along said first and second tangent lines, and rotating said roller stamp;

Inking said raised pattern on said roller stamp by said inkpad at said first point of tangency;

Inking the predetermined region of said substrate by the inked roller stamp at said second point of tangency, so as to transfer said raised pattern on the surface of said substrate; and

performing a fixation process to solidify said ink on said surface of said substrate, so as to form a substrate with a solidified ink.

26. A micro-stamping method for photoelectric process, comprising:

providing a roller stamp, an ink, an inkpad having a raised pattern and a substrate, and inking said raised pattern on said inkpad, wherein said inkpad is moved along a first tangent line of said roller stamp and contacted with said roller stamp at a first point of tangency, while said substrate is moved along a second tangent line of said roller stamp and contacted with said roller stamp at a second point of tangency, and said first tangent line is parallel and in opposite direction with said second tangent line;

moving said inkpad and said substrate along said first and second tangent lines, and rotating said roller stamp;

Inking the predetermined region of said roller stamp by said inkpad at said first point of tangency, so as to transfer said raised pattern on the surface of said roller stamp;

Inking the predetermined region of said substrate by the inked roller stamp at said second point of tangency, so as to transfer said

raised pattern on the surface of said substrate; and

performing a fixation process to solidify said ink on said surface of said substrate, so as to form a substrate with a solidified ink.

27. A micro-stamping method for photoelectric process, comprising:

providing a stamp apparatus having a raised pattern, an inkpad containing an ink and a substrate, wherein said inkpad is moved along a first direction and contacted with said stamp apparatus at a first point, while said substrate is moved along a second direction and contacted with said stamp apparatus at a second point, and said first direction is parallel and in opposite direction with said second direction;

moving said inkpad and said substrate along said first and second direction, and operating said stamp apparatus;

Inking said raised pattern on said stamp apparatus by said inkpad at said first point;

Inking the predetermined region of said substrate by the inked stamp apparatus at said second point, so as to transfer said raised pattern on the surface of said substrate; and

performing a fixation process to solidify said ink on said surface of said substrate, so as to form a substrate with a solidified ink.

28. The method according to claim 27, wherein said stamp apparatus comprising:

a belt conveyer, wherein said belt conveyer having

predetermined raised pattern outside thereon; and

a plurality of gears, wherein said plurality of gears are on the inside of said belt conveyer, and at least two gears contacted with said belt conveyer, and said plurality of gears are operated, so as to work said stamp apparatus.

29. A micro-stamping method for photoelectric process, comprising:

providing a stamp apparatus, an ink, an inkpad having a raised pattern and a substrate, and inking said raised pattern on said inkpad, wherein said inkpad is moved along a first direction and contacted with said stamp apparatus at a first point, while said substrate is moved along a second direction and contacted with said stamp apparatus at a second point, and said first direction is parallel and in opposite direction with said second direction;

moving said inkpad and said substrate along said first and second direction, and operating said stamp apparatus;

Inking the predetermined region of said stamp apparatus by said inkpad at said first point, so as to transfer said raised pattern on said stamp apparatus;

Inking the predetermined region of said substrate by the inked stamp apparatus at said second point, so as to transfer said raised pattern on the surface of said substrate; and

performing a fixation process to solidify said ink on said surface of said substrate, so as to form a substrate with a solidified ink.

30. The method according to claim 29, wherein said stamp

apparatus comprising:

a belt conveyer, wherein said belt conveyer having a flat surface; and

a plurality of gears, wherein said plurality of gears are on the inside of said belt conveyer, and at least two gears contacted with said belt conveyer, and said plurality of gears are operated, so as to work said stamp apparatus.

31. A micro-stamping method for photoelectric process, comprising:

providing a roller stamp having a raised pattern, an inkpad containing an ink and a substrate, wherein said inkpad and said substrate are on the same plane and located in specific order, and said plane is moved along a tangent line of said roller stamp;

moving said inkpad along said tangent line, and rotating said roller stamp, wherein said raised pattern on said roller stamp is inked by said inkpad after said roller stamp rotates a complete circle;

moving said substrate along said tangent line and keeping said roller stamp rotating, then the predetermined region of said substrate is inked by the inked roller stamp, so as to transfer said raised pattern on the surface of said substrate; and

performing a fixation process to solidify said ink on said surface of said substrate, so as to form a substrate with a solidified ink.

32. A micro-stamping method for photoelectric process, comprising:

providing a roller stamp, an ink, an inkpad having a raised

pattern and a substrate, and inking said raised pattern on said inkpad, wherein said inkpad and said substrate are on the same plane and located in specific order, and said plane is moved along a tangent line of said roller stamp;

moving said inkpad along said tangent line, and rotating said roller stamp, wherein said predetermined region of said roller stamp is inked by said inkpad, so as to transfer said raised pattern on said roller stamp after said roller stamp rotates a complete circle;

moving said substrate along said tangent line and keeping said roller stamp rotating, then the predetermined region of said substrate is inked by the inked roller stamp, so as to transfer said raised pattern on the surface of said substrate; and

performing a fixation process to solidify said ink on said surface of said substrate, so as to form a substrate with a solidified ink.